# ASBESTOS CONTAINING MATERIALS SURVEY

of the

# Hope Lighthouse Ministries (HLM) Buildings 444 Irwin Avenue Muskegon, Michigan

Prepared for:

City of Muskegon 933 Terrace Street Muskegon, Michigan

For use by:

Foundation Real Estate, LLC

*Prepared by:* 

Horizon Environmental 4771 – 50<sup>th</sup> Street, S.E., Suite One Grand Rapids, Michigan 49512

January, 2012

MUS-1401

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1 Analytical Report and Chain-of-Custody

### 1.0 INTRODUCTION

Horizon Environmental Corporation (Horizon) performed an asbestos containing materials (ACM) survey of the Hope Lighthouse Ministries (HLM) buildings located at 444 Irwin Avenue in the City of Muskegon, Muskegon County, Michigan. The survey was conducted by Horizon accredited asbestos building inspector David Bandlow (State of Michigan Accreditation Number A37620) and Liz Bartz on December 21, 2011. This survey was performed to meet requirements specified in the National Emission Standards for Hazardous Air Pollutants (NESHAP; 40 CFR Part 61, Subpart M), and in accordance with the *Sampling and Analysis Plan: Asbestos Containing Materials* prepared by Horizon for the City of Muskegon, Community and Economic Development Department dated December 13, 2011. This asbestos survey included a visual inspection, sampling, and analysis of building materials in all areas of the HLM buildings to identify ACMs.

# **2.0 BUILDING INFORMATION**

The HLM buildings include two attached 3-story buildings totaling approximately 105,000 square feet. A site layout map is depicted on Figure 1. The eastern-most building is referred to as Building 1 and includes a 1-story warehouse attached to the north. The western-most building is referred to as Building 2 and includes an enclosed truck dock to the north and a partial basement. Between the two buildings is an enclosed walkway providing access to the first, second, and third floors.

The property has recently been used as offices, a thrift store, and a ministry for HLM. An electrical supply company (i.e., Fitzpatrick Electric) previously operated on the property. The buildings are brick and block construction on a poured concrete foundation with wooden columns, joists, and trusses making up the structural support members of the buildings. Corrugated metal siding has been placed over the exterior walls and the roof is covered with a black synthetic rubber membrane.

### 2.1 BUILDING 1

The first floor of Building 1 has a concrete subfloor, wooden or block walls, and a wooden ceiling. It is largely open warehouse space; however several offices exist on the south end of the building with drywall walls, compressed fiber panel walls, and drop ceilings. Floor tile is present on the south end of the warehouse space of Building 1, and in some areas two layers of floor tile are present. In the office space, carpet is present above the floor tile. Yellow carpet mastic from previously removed carpet is present over floor tile in some areas. Pipes observed throughout Building 1 were either not insulated or were insulated with fiberglass. Certain windows throughout Building 1 have individual panes held in place with window caulk. On the north side of Building 1 there is an approximately 4,000 square foot attached warehouse composed of concrete floors and metal walls with sprayed-on insulation.

The second floor of Building 1 is primarily office space. There is a wooden subfloor overlain with carpet or tile, drywall or wooden walls, and a wooden ceiling present throughout. The bathrooms contain ceramic tile and drop-ceiling tile. Baseboard is present on the base of several walls.

The third floor of Building 1 is warehouse space. The floors, ceiling, and support members are wood. The walls are composed of brick or drywall. There is a heating and cooling equipment room located near the northwest corner of the third floor of Building 1. The equipment room has drywall and brick walls, and a black floor coating is present overlying a wooden subfloor.

### 2.2 BUILDING 2

The first floor of Building 2 was used as the ministry and as warehouse space. Walls are brick or block, floors are wood or concrete, and the ceiling and support members are wood. There is a truck dock attached to the north end of Building 2. In the northeast corner of the first floor, there is an office and men's bathroom with drywall walls, floor tile, and drop-ceiling tile. Above the drop-ceiling in the men's bathroom is an 8 to 10 lineal foot section of 5 inch pipe insulated with non-fiberglass material. All other piping in Building 2 is insulated with fiberglass or is not insulated. Windows throughout Building 2 have individual panes held in place with window caulk.

The second and third floors of Building 2 are warehouse space. The floors, ceiling, and support members are wood. The walls are primarily composed of brick. Window caulk was the only suspect ACM observed on these floors.

The basement of Building 2 has a concrete floor, poured concrete and block walls, wooden structural supports, and a wooden ceiling. Sections of piping in the basement are insulated with fiberglass. On the west side of the basement there is a small mechanical room with a white insulating material located between the wooden walls.

### 3.0 SCOPE OF WORK

The ACM survey consisted of a visual inspection of the buildings and collection of 45 representative samples (57 total layers) of suspect ACMs, including floor tile, floor tile mastic, carpet adhesive, window caulk, drywall and drywall mud, ceiling tile, pipe wrap and insulation, baseboard and baseboard adhesive, floor coatings, and miscellaneous material. Samples were collected using a utility knife, needle-nosed pliers, hammer and chisel. Each sample was placed into a sealable plastic bag and labeled based on the sample location with the following nomenclature:

FE-ACM-B1-F1-# (Fitzpatrick Electric-ACM-Building 1-Floor 1-sample #)

FE-ACM-B1-F2-# (Fitzpatrick Electric-ACM-Building 1, Floor 2-sample #)

FE-ACM-B1-F3-# (Fitzpatrick Electric-ACM-Building 1, Floor 3-sample #)

FE-ACM-B2-B-# (Fitzpatrick Electric-ACM-Building 2, Basement-sample #)

```
FE-ACM-B2-F1-# (Fitzpatrick Electric-ACM-Building 2, Floor 1-sample #) FE-ACM-B2-F2-# (Fitzpatrick Electric-ACM-Building 2, Floor 2-sample #) FE-ACM-B2-F3-# (Fitzpatrick Electric-ACM-Building 2, Floor 3-sample #)
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Samples were submitted under chain-of-custody control to Fibertec Industrial Hygiene Services (Fibertec) in Holt, Michigan and analyzed for Polarized Light Microscopy (PLM) evaluation for asbestos. A copy of the laboratory report and chain-of-custody is included as Attachment 1.

### 4.0 RESULTS

All of the sample locations are shown on the attached figures, and samples that contained asbestos are highlighted in red. Any material that contains more than one percent (1%) asbestos is considered an asbestos-containing material and is subject to regulation as an ACM. The figures are separated by floor in the following manner:

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Figure 2 – Buildings 1 and 2, First Floor
Figure 3 – Buildings 1 and 2, Second Floor
Figure 4 – Buildings 1 and 2, Third Floor
```

Figure 5 – Building 2, Basement

Homogeneous material sample descriptions and percent of asbestos detected are shown on Table 1. The only building materials found to contain asbestos were floor tile, floor tile mastic, and pipe insulation. The roofing material was not sampled in order to preserve the integrity of the roof; however, based on the age of the building it is possible that asbestos containing asphaltic roofing material is present underneath the synthetic rubber roof membrane.

### 4.1 FLOOR TILE AND FLOOR TILE MASTIC

As shown on Figure 2, asbestos containing floor tile and floor tile mastic were discovered in the southern portion of the first floor of Building 1. In this portion of the building, gray 12 by 12-inch floor tile overlies a second layer of what appeared to be brown 12 by 12-inch floor tile. Both the top and bottom (i.e., gray and brown) layers of floor tile were found to contain between 2% to 4% asbestos. The black mastic associated with the floor tiles was also found to contain 2% to 4% asbestos. Both layers of floor tile are secured to their respective substrate with black mastic. A summary of the floor tile and mastic samples that contain asbestos is as follows:

Sample No.	Building Material	Sample Location	Percent Asbestos
FE-ACM-B1-F1-02		North of office 1	
Layer 1	12"x12" gray floor tile		2%
Layer 2	Black mastic		2%

Sample No.	Building Material	Sample Location	Percent Asbestos
FE-ACM-B1-F1-06		North of front entry	
Layer 2	Black mastic		2%
FE-ACM-B1-F1-07		North of front entry	
Layer 1	12"x12" brown floor tile		3%
Layer 2	Black mastic		4%
FE-ACM-B1-F1-45		North of receptionist	
Layer 1	12"x12" brown floor tile	raised platform	4%
Layer 2	Black mastic		2%

Floor tile and mastic sampled from other areas in the HLM buildings did not contain asbestos. Assuming that the asbestos containing floor tile and mastic is limited to the first floor of Building 1, there are approximately 8,000 square feet of ACM floor tile and mastic, of which approximately 3,200 square feet is double-layered floor tile.

### 4.2 PIPE INSULATION

On the first floor of Building 2, a small section of piping was found to be insulated with suspect ACM. The pipe is a 5 inch water line located above the drop-ceiling in the northeast corner men's bathroom, with approximately 8 to 10 lineal feet of insulation. The insulating material is a combination of fabric pipe wrap and mudded fittings. A depiction of the sample location is provided as Figure 2. The sample of pipe wrap did not contain asbestos; however, the mudded fitting sample that was collected contained 8% asbestos.

Sample No.	Building Material	Sample Location	Percent Asbestos
FE-ACM-B2-F1-30	Pipe insulation	Men's restroom	8%

There are approximately 4 asbestos-containing mudded fittings located above the bathroom on the first floor of Building 2.

# 5.0 DISCUSSION

Based on the results of this survey, floor tile and floor tile mastic in the HLM buildings has been identified as regulated asbestos-containing material. Any material that contains more than one percent (1%) asbestos is considered an asbestos-containing material and is subject to regulation as an ACM. Floor tile is regulated as Category I non-friable ACM, and floor tile mastic is regulated as Category II non-friable ACM. The asbestos-containing floor tile and mastic in the HLM buildings appears to be limited to the southern half of the first floor of Building 1.

The floor tile and mastic that contains asbestos does not need to be removed from the building if it is appropriately maintained. If more that 160 square feet of asbestos-containing floor tile and mastic are to be removed, and the removal is done such that the ACM will be reduced to powder (i.e., become "friable") during the removal process, a 10-day notification to the Michigan Department of Environmental Quality (MDEQ) and Michigan Department of Licensing and Regulatory Affairs (LARA) is required pursuant to NESHAP, 40 CFR Part 61, Subpart M. If floor tile and mastic are removed in a manner that does not involve grinding, cutting, abrading, or pulverizing and there is no potential for the ACM to become friable during removal, no notification is required.

Asbestos containing insulating mud was found to be present on approximately 4 individual fittings on a single 5-inch pipe above the men's bathroom on the first floor of Building 2. No other mudded pipe fittings were identified in either Building 1 or Building 2 during the survey. Pipe insulating mud is regulated as a friable asbestos-containing material. This material does not need to be removed from the building if it is properly maintained. If this material is to be removed from the building, it is exempt from NESHAP notification requirements because less than 10 lineal feet of material are present in the building (40 CFR, Part 61.145, Paragraph A).

Any removal activities of asbestos-containing floor tile, mastic, or pipe insulating mud should be performed by qualified personnel, regardless of notification requirements.

Horizon performed non-destructive sampling during this survey and the potential exists for concealed ACMs to be present in inaccessible portions of the building. For example, it is possible that asphaltic roofing materials that contain asbestos are present beneath the synthetic rubber membrane on the roof. The rubber membrane was not cut or otherwise disturbed during the survey in order to preserve the integrity of the roof. If during future renovations suspect ACM is encountered, it should be sampled to verify the absence or presence of asbestos.

# TABLE 1

# SUMMARY OF ASBESTOS ANALYTICAL RESULTS 5704 MILLETT HIGHWAY, LANSING, MICHIGAN December 2011

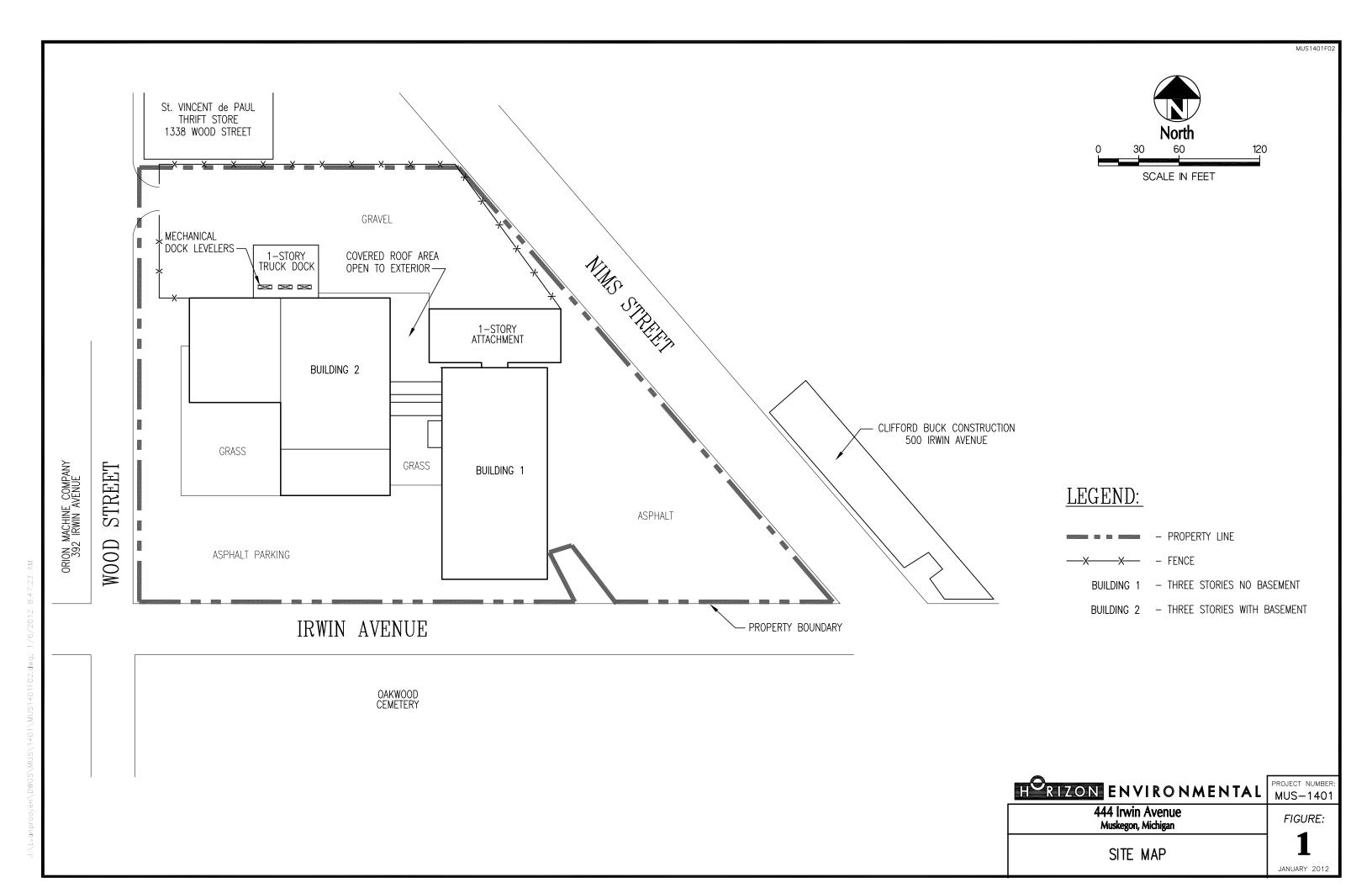
SAMPLE NUMBER	SAMPLE DESCRIPTION	SAMPLE LOCATION	PERCENT ASBESTOS
	Building 1, Floo		110220100
FE-ACM-B1-F1-01	2'x2' white ceiling tile	North of office 1	NAD
FE-ACM-B1-F1-02		North of office 1	
Layer 1	12"x12" gray floor tile		2%
Layer 2	Black mastic		2%
FE-ACM-B1-F1-03	Yellow carpet adhesive	North of office 1	NAD
FE-ACM-B1-F1-04	Yellow carpet adhesive	North of office 1	NAD
FE-ACM-B1-F1-05	Compressed fiber wall	Ceiling between office 1 and office 2	NAD
FE-ACM-B1-F1-06		North of front entry	
Layer 1	12"x12" gray floor tile		NAD
Layer 2	Black mastic		2%
FE-ACM-B1-F1-07		North of front entry	
Layer 1	12"x12" brown floor tile		3%
Layer 2	Black mastic		4%
FE-ACM-B1-F1-08	100, 100, 61, 11	North of offices/east	NAD
Layer 1	12"x12" green floor tile	of kitchen	NAD
Layer 2	Black mastic	Kitchen wall	NAD
FE-ACM-B1-F1-09	Drywall, white granular	Kitchen wall	NAD
Layer 1 Layer 2	Drywall, brown fibrous		NAD NAD
FE-ACM-B1-F1-10	2'x4' white ceiling tile	Ceiling adjacent to	NAD
TE-ACM-DI-TT-10	2 x4 white centing the	kitchen wall	NAD
FE-ACM-B1-F1-11	Window caulk	Old window, east wall	NAD
FE-ACM-B1-F1-12	Red leveling compound	North of office 2	NAD
FE-ACM-B1-F1-13	12"x12"light blue floor	Unisex restroom	NAD
	tile		
FE-ACM-B1-F1-14	Black mastic	Unisex restroom	NAD
FE-ACM-B1-F1-15	2'x2' white ceiling tile	Unisex restroom	NAD
FE-ACM-B1-F1-16	Window caulk	Old window, north wall	NAD
FE-ACM-B1-F1-17	Sprayed-on insulation	Attached warehouse,	NAD
		east wall	
FE-ACM-B1-F1-18	Sprayed-on insulation	Attached warehouse, north wall	NAD
FE-ACM-B1-F1-19	Sprayed-on insulation	Attached warehouse, west wall	NAD
FE-ACM-B1-F1-44		North of receptionist	
Layer 1	12"x12" gray floor tile	raised platform	NAD
Layer 2	Black mastic		NAD
FE-ACM-B1-F1-45		North of receptionist	
Layer 1	12"x12" brown floor tile	raised platform	4%
Layer 2	Black mastic		2%
	Building 1, Floo	1	T
FE-ACM-B1-F2-33	12"x12" brown floor tile	Hallway near freight elevator	NAD

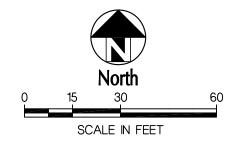
# TABLE 1

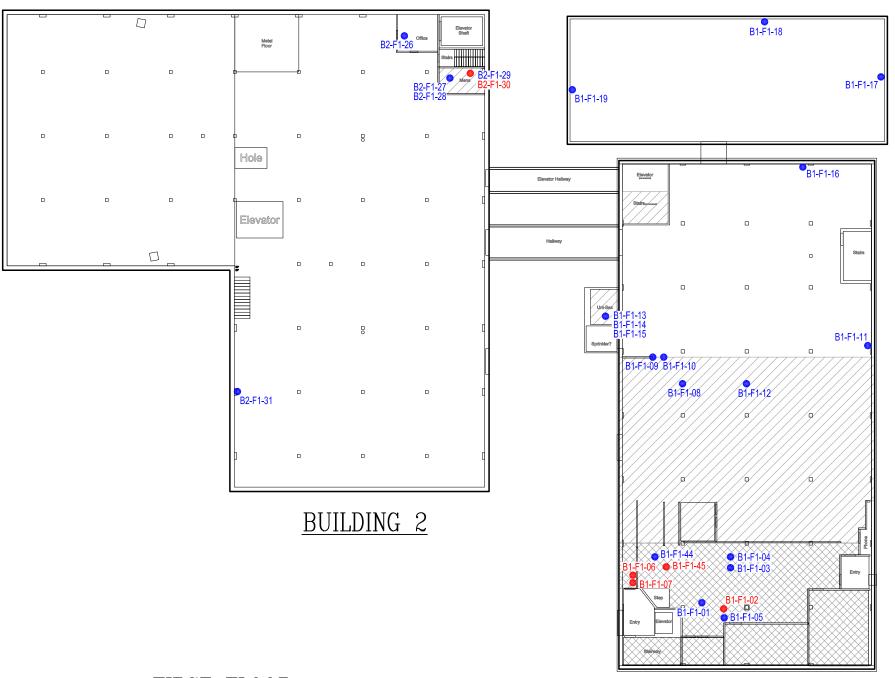
# SUMMARY OF ASBESTOS ANALYTICAL RESULTS 5704 MILLETT HIGHWAY, LANSING, MICHIGAN December 2011

SAMPLE NUMBER	SAMPLE DESCRIPTION	SAMPLE LOCATION	PERCENT ASBESTOS
	Building 1, Floor 2 (	continued)	110220100
FE-ACM-B1-F2-34	<b>3</b> -, (	Hallway near freight	
Layer 1	12"x12" beige floor tile	elevator	NAD
Layer 2	Black mastic		NAD
FE-ACM-B1-F2-35		Hallway near freight	
Layer 1	Brown baseboard	elevator	NAD
Layer 2	Baseboard adhesive		NAD
FE-ACM-B1-F2-36	White wall compound	Hallway near freight elevator	NAD
FE-ACM-B1-F2-37	12"x12" beige floor tile	Room in back of office	NAD
FE-ACM-B1-F2-38	<u> </u>		NAD
FE-ACM-B1-F2-39	Drywall	Lobby	NAD
FE-ACM-B1-F2-40	Drywall mud	Electrical closet	NAD
FE-ACM-B1-F2-41	Baseboard adhesive	Conference room	NAD
FE-ACM-B1-F2-42	2'x2' white ceiling tile	Men's restroom	NAD
FE-ACM-B1-F2-43		Office next to passenger	
Layer 1	Baseboard	elevator	NAD
Layer 2	Baseboard adhesive		NAD
•	Building 1, Flo	oor 3	
FE-ACM-B1-F3-20	Black floor coating	East side of boiler room	NAD
FE-ACM-B1-F3-21	Black floor coating	West side of boiler room	NAD
FE-ACM-B1-F3-22	Drywall mud	East side of boiler room	NAD
FE-ACM-B1-F3-23	Window caulk	North wall	NAD
	Building 2, Base	ement	
FE-ACM-B2-B-32	Wall insulation	"Wooden" mechanical room	NAD
	Building 2, Flo	or 1	'
FE-ACM-B2-F1-26	7	Northeast office	
Layer 1	Drywall, white granular		NAD
Layer 2	Drywall, brown fibrous		NAD
FE-ACM-B2-F1-27	·	Men's restroom	
Layer 1	12"x12" gray floor tile		NAD
Layer 2	Black mastic		NAD
FE-ACM-B2-F1-28	2'x2' white ceiling tile	Men's restroom	NAD
FE-ACM-B2-F1-29	Pipe wrap	Men's restroom	NAD
FE-ACM-B2-F1-30	Pipe insulation	Men's restroom	8%
FE-ACM-B2-F1-31	Window caulk	West window	NAD
	Building 2, Flo	or 2	
FE-ACM-B2-F2-25	Window caulk	Window in NE corner (north wall)	NAD
	Building 2, Flo	oor 3	
FE-ACM-B3-F3-24	Window Caulk	Window in NE corner (east wall)	NAD

NAD – No Asbestos Detected







FIRST FLOOR

BUILDING 1

# LEGEND:

- NON-ASBESTOS SAMPLE



- ASBESTOS-CONTAINING SAMPLE



- 12" x 12" FLOOR TILE



NOTE: BASE DRAWING OBTAINED FROM GRAPHICS HOUSE IMAGING, MUSKEGON, MICHIGAN.

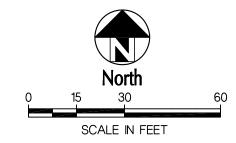


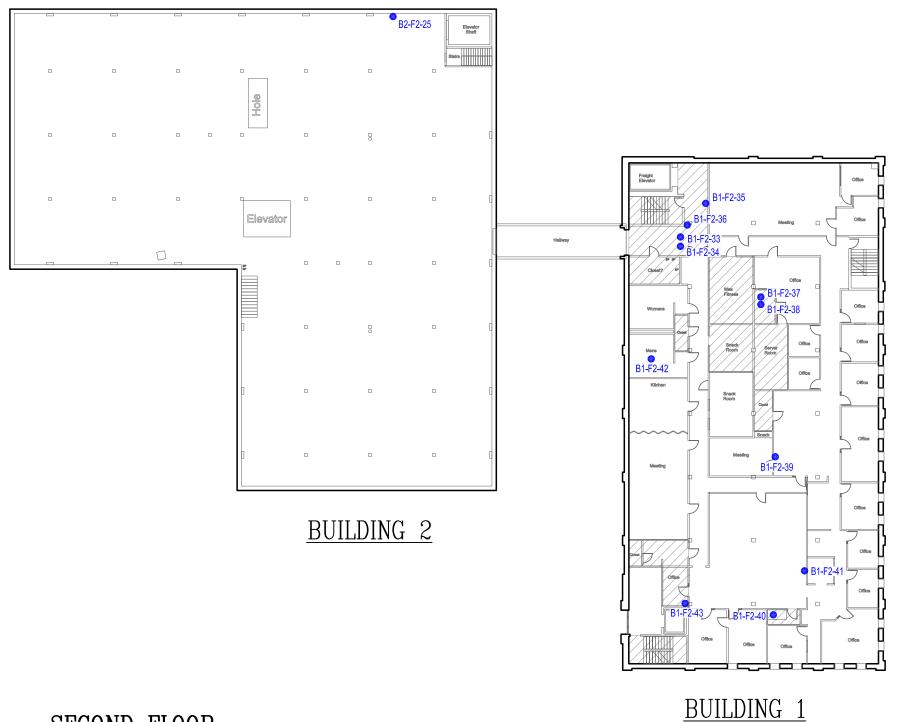
PROJECT NUMBER: MUS-1401

444 Irwin Avenue Muskegon, Michigan

ASBESTOS SAMPLE LOCATIONS FIRST FLOOR FIGURE:

JANUARY 2012





LEGEND:

- NON-ASBESTOS CONTAINING SAMPLE



- 12" x 12" FLOOR TILE

NOTE: BASE DRAWING OBTAINED FROM GRAPHICS HOUSE IMAGING, MUSKEGON, MICHIGAN.

# HORIZON ENVIRONMENTAL

PROJECT NUMBER: MUS-1401

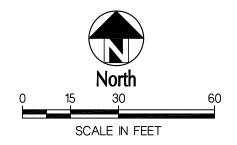
444 Irwin Avenue Muskegon, Michigan

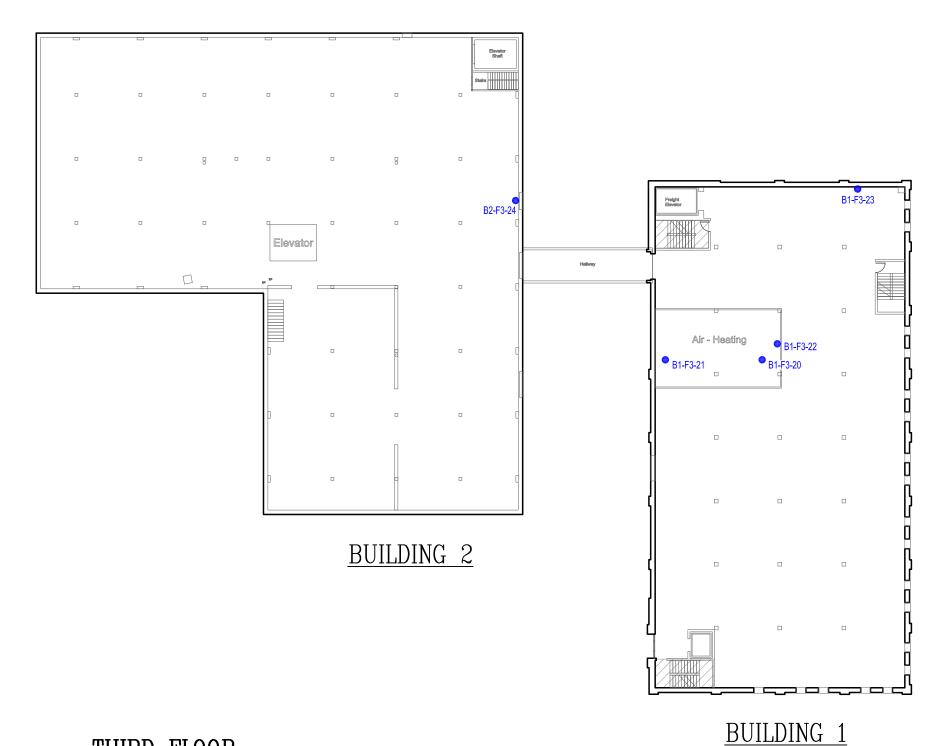
ASBESTOS SAMPLE LOCATIONS SECOND FLOOR

FIGURE:

JANUARY 2012

SECOND FLOOR





LEGEND:

- NON-ASBESTOS CONTAINING SAMPLE



- 12" x 12" FLOOR TILE

NOTE: BASE DRAWING OBTAINED FROM GRAPHICS HOUSE IMAGING, MUSKEGON, MICHIGAN.

HORIZON ENVIRONMENTAL

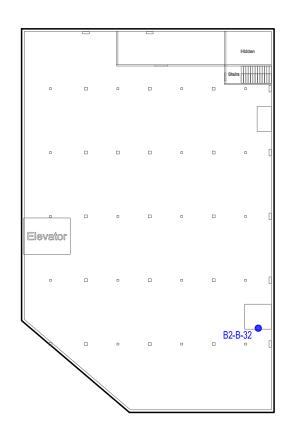
444 Irwin Avenue Muskegon, Michigan

ASBESTOS SAMPLE LOCATIONS THIRD FLOOR

FIGURE:

PROJECT NUMBER:

JANUARY 2012



BUILDING 2

# LEGEND:

- NON-ASBESTOS CONTAINING SAMPLE

NOTE: BASE DRAWING OBTAINED FROM GRAPHICS HOUSE IMAGING, MUSKEGON, MICHIGAN.

HORIZON ENVIRONMENTAL

444 Irwin Avenue Muskegon, Michigan

ASBESTOS SAMPLE LOCATIONS BASEMENT

FIGURE:

PROJECT NUMBER: MUS-1401

JANUARY 2012

**BASEMENT** 

LABORATORY REPORT AND CHAINS-OF-CUSTODY



# **BULK SAMPLE ANALYTICAL REPORT**

Client Name:		Horizon Environmental Corp.		
Project Name:		MUS-1401		
Summary:		45 Submitted Bulk Samples, 57 Sample Layers Analyzed	1.	
_				
Date Sampled:	12/21/2011	Client P.O. #:	N/A	
Date Submitted:	12/23/2011	C.O.C. #:	00001	
Date Analyzed:	12/27-28/2011			

Fibertec Sample	Client I.D.			Non-Asbestos Containing	
No.	No.	Description / Location	Asbestos Type	Portion	Analyst
FE-ACM- B1-F1-01	FE-ACM- B1-F1-01	White spongy material, 2' x 2' white acoustic ceiling tile.	NAD	Non-fibrous material >99% Cellulose fibers <1%	JAW
FE-ACM- B1-F1-02	FE-ACM- B1-F1-02	Brown rubbery material, 12" x 12" gray floor tile. Layer 1 of 2.	Chrysotile 2%	Non-fibrous material 96% Cellulose fibers 2%	JAW
FE-ACM- B1-F1-02	FE-ACM- B1-F1-02	Black asphaltic material, 12" x 12" gray floor tile black mastic. Layer 2 of 2.	Chrysotile 2%	Non-fibrous material 95% Cellulose fibers 3%	JAW
FE-ACM- B1-F1-03	FE-ACM- B1-F1-03	Brown brittle material, yellow carpet adhesive.	NAD	Non-fibrous material 96% Cellulose fibers 4%	JAW
FE-ACM- B1-F1-04	FE-ACM- B1-F1-04	Brown brittle material, yellow carpet adhesive.	NAD	Non-fibrous material 97% Cellulose fibers 3%	JAW
FE-ACM- B1-F1-05	FE-ACM- B1-F1-05	White brittle material, compressed fiber walls.	NAD	Non-fibrous material 98% Cellulose fibers 2%	JAW
FE-ACM- B1-F1-06	FE-ACM- B1-F1-06	Light green rubbery material, 12" x 12" gray floor tile. Layer 1 of 2.	NAD	Non-fibrous material 97% Cellulose fibers 3%	JAW

# **BULK SAMPLE ANALYTICAL REPORT**

Client Name:		Horizon Environmental Corp.		
Project Name:		MUS-1401		
Summary:		45 Submitted Bulk Samples, 57 Sample Layers Analyz	æd.	
Date Sampled:	12/21/2011	Client P.O. #:	N/A	
Date Submitted:	12/23/2011	C.O.C. #:	00001	
Date Analyzed:	12/27 28/2011	<del></del>		

Fibertec	Client I.D.			N Al A C A C	
Sample No.	No.	Description / Location	Asbestos Type	Non-Asbestos-Containing Portion	Analyst
FE-ACM- B1-F1-06	FE-ACM- B1-F1-06	Black asphaltic material, 12" x 12" gray floor tile black mastic. Layer 2 of 2.	Chrysotile 2%	Non-fibrous material 90% Cellulose fibers 8%	JAW
FE-ACM- B1-F1-07	FE-ACM- B1-F1-07	Brown cementitious material, 12" x 12" brown floor tile. Layer 1 of 2.	Chrysotile 3%	Non-fibrous material 94% Cellulose fibers 3%	JAW
FE-ACM- B1-F1-07	FE-ACM- B1-F1-07	Black asphaltic material, 12" x 12" brown floor tile black mastic.  Layer 2 of 2.	Chrysotile 4%	Non-fibrous material 90% Cellulose fibers 6%	JAW
FE-ACM- B1-F1-08	FE-ACM- B1-F1-08	Green cementitious material, 12" x 12" green floor tile. Layer 1 of 2.	NAD	Non-fibrous material 97% Cellulose fibers 3%	JAW
FE-ACM- B1-F1-08	FE-ACM- B1-F1-08	Black asphaltic material, 12" x 12" green floor tile black mastic. Layer 2 of 2.	NAD	Non-fibrous material 96% Cellulose fibers 4%	JAW
FE-ACM- B1-F1-09	FE-ACM- B1-F1-09	White granular material, drywall.  Layer 1 of 2.	NAD	Non-fibrous material 94% Cellulose fibers 6%	JAW
FE-ACM- B1-F1-09		Brown fibrous material, drywall. Layer 2 of 2.	NAD	Cellulose fibers 92% Non-fibrous material 8%	JAW



# **BULK SAMPLE ANALYTICAL REPORT**

Client Name:		Horizon Environmental Corp.		
Project Name:		MUS-1401		
Summary:		45 Submitted Bulk Samples, 57 Sample Layers Analys	zed.	
Date Sampled:	12/21/2011	Client P.O. #:	N/A	
Date Submitted:	12/23/2011	C.O.C. #:	00001	
Data Analyzadi	12/27 29/2011			

Fibertec Sample	Client I.D.			Non Ashestes Containing	
No.	No.	Description / Location	Asbestos Type	Non-Asbestos-Containing Portion	Analyst
FE-ACM- B1-F1-10	FE-ACM- B1-F1-10	White fibrous material, 2' x 4' white ceiling tile.	NAD	Cellulose fibers 40% Non-fibrous material 35% Fibrous glass 25%	JAW
FE-ACM- B1-F1-11	FE-ACM- B1-F1-11	Gray cementitious material, window caulk.	NAD	Non-fibrous material 97% Cellulose fibers 3%	JAW
FE-ACM- B1-F1-12	FE-ACM- B1-F1-12	Red tabular material, red leveling compound.	NAD	Non-fibrous material 98% Cellulose fibers 2%	JAW
FE-ACM- B1-F1-13		Light blue cementitious material, 12" x 12" light blue floor tile.	NAD	Non-fibrous material 98% Cellulose fibers 2%	JAW
FE-ACM- B1-F1-14	FE-ACM- B1-F1-14	Black asphaltic material, black mastic.	NAD	Non-fibrous material 96% Cellulose fibers 4%	JAW
FE-ACM- B1-F1-15	FE-ACM- B1-F1-15	White fibrous material, 2' x 2' white ceiling tile.	NAD	Cellulose fibers 40% Fibrous glass 40% Non-fibrous material 20%	JAW
FE-ACM- B1-F1-16		Brown cementitious material, window caulk.	NAD	Non-fibrous material 98% Cellulose fibers 2%	JAW

# **BULK SAMPLE ANALYTICAL REPORT**

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Project Name:		MUS-1401		
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Date Submitted:	12/23/2011	C.O.C. #:	00001	
Date Analyzed:	12/27-28/2011	<del></del>		

Fibertec Sample No.	Client I.D. No.	Description / Location	Asbestos Type	Non-Asbestos-Containing Portion	Analyst
FE-ACM- B1-F1-17	FE-ACM- B1-F1-17	White fibrous material, blown on insulation.	NAD	Cellulose fibers 60% Non-fibrous material 40%	JAW
FE-ACM- B1-F1-18	FE-ACM- B1-F1-18	White fibrous material, blown on insulation.	NAD	Cellulose fibers 65% Non-fibrous material 35%	JAW
FE-ACM- B1-F1-19	FE-ACM- B1-F1-19	White fibrous material, blown on insulation.	NAD	Cellulose fibers 70% Non-fibrous material 30%	JAW
FE-ACM-B1-F3-20	FE-ACM- B1-F3-20	Black rubbery material, black floor coating.	NAD	Non-fibrous material 98% Cellulose fibers 2%	JAW
FE-ACM-B1-F3-21	FE-ACM- B1-F3-21	Black rubbery material, black floor coating.	NAD	Non-fibrous material 96% Cellulose fibers 4%	JAW
FE-ACM-B1-F3-22	FE-ACM- B1-F3-22	White cementitious material, drywall mud.	NAD	Non-fibrous material 98% Cellulose fibers 2%	JAW
FE-ACM- B1-F3-23		Red cementitious material, window caulk.	NAD	Non-fibrous material 97% Cellulose fibers 3%	JAW

# **BULK SAMPLE ANALYTICAL REPORT**

Client Name:		Horizon Environmental Corp.		
Project Name:		MUS-1401		
Summary:		45 Submitted Bulk Samples, 57 Sample Layers Analyze	ed.	
Date Sampled:	12/21/2011	Client P.O. #:	N/A	
Date Submitted:	12/23/2011	C.O.C. #:	00001	
Date Analyzed:	12/27-28/2011	<del></del>		

Fibertec Sample	Client I.D.			Non-Asbestos-Containing	
No.	No.	Description / Location	Asbestos Type	Portion	Analyst
FE-ACM- B2-F3-24	FE-ACM- B2-F3-24	Gray cementitious material, window caulk.	NAD	Non-fibrous material 97% Cellulose fibers 3%	JAW
FE-ACM- B2-F2-25	FE-ACM- B2-F2-25	Gray cementitious material, window caulk.	NAD	Non-fibrous material 98% Cellulose fibers 2%	JAW
FE-ACM- B2-F1-26	FE-ACM- B2-F1-26	White granular material, drywall.  Layer 1 of 2.	NAD	Non-fibrous material 93% Cellulose fibers 7%	JAW
FE-ACM- B2-F1-26		Brown fibrous material, drywall. Layer 2 of 2.	NAD	Cellulose fibers 86% Non-fibrous material 14%	JAW
FE-ACM- B2-F1-27	FE-ACM- B2-F1-27	Gray cementitious material, 12" x 12" gray floor tile. Layer 1 of 2.	NAD	Non-fibrous material 98% Cellulose fibers 2%	JAW
FE-ACM- B2-F1-27	FE-ACM- B2-F1-27	Brown rubbery material, 12" x 12" gray floor tile mastic. Layer 2 of 2.	NAD	Non-fibrous material 94% Cellulose fibers 6%	JAW
FE-ACM- B2-F1-28	FE-ACM- B2-F1-28	White fibrous material, 2' x 2' white ceiling tile.	NAD	Cellulose fibers 55% Fibrous glass 35% Non-fibrous material 10%	JAW

# **BULK SAMPLE ANALYTICAL REPORT**

Client Name:		Horizon Environmental Corp.		
Project Name:		MUS-1401		
Summary:		45 Submitted Bulk Samples, 57 Sample Layers Analy	zed.	
Date Sampled:	12/21/2011	Client P.O. #:	N/A	
Date Submitted:	12/23/2011	C.O.C. #:	00001	
Date Analyzed:	12/27 28/2011	<del></del>		

Fibertec Sample No.	Client I.D. No.	Description / Location	Asbestos Type	Non-Asbestos-Containing Portion	Analyst
FE-ACM- B2-F1-29	FE-ACM- B2-F1-29	Brown fibrous material, pipe wrap.	NAD	Cellulose fibers 75% Non-fibrous material 25%	JAW
FE-ACM- B2-F1-30		White fibrous material, pipe insulation.	Chrysotile 8%	Non-fibrous material 82% Cellulose fibers 10%	JAW
FE-ACM- B2-F1-31	FE-ACM- B2-F1-31	Brown cementitious material, window caulk.	NAD	Non-fibrous material 98% Cellulose fibers 2%	JAW
FE-ACM- B2-B1-32		White fibrous material, wall insulation.	NAD	Fibrous glass 70% Non-fibrous material 24% Cellulose fibers 6%	JAW
FE-ACM- B1-F2-33	FE-ACM- B1-F2-33	Brown cementitious material, 12" x 12" brown floor tile.	NAD	Non-fibrous material 98% Cellulose fibers 2%	JAW
FE-ACM- B1-F2-34	FE-ACM- B1-F2-34	Beige cementitious material, 12" x 12" beige floor tile. Layer 1 of 2.	NAD	Non-fibrous material 97% Cellulose fibers 3%	JAW
FE-ACM- B1-F2-34		Brown rubbery material, 12" x 12" beige floor tile yellow mastic. Layer 2 of 2.	NAD	Non-fibrous material 95% Cellulose fibers 5%	JAW

# **BULK SAMPLE ANALYTICAL REPORT**

Client Name:		Horizon Environmental Corp.		
Project Name:		MUS-1401		
Summary:		45 Submitted Bulk Samples, 57 Sample Layers Analy	zed.	
Date Sampled:	12/21/2011	Client P.O. #:	N/A	
Date Submitted:	12/23/2011	C.O.C. #:	00001	
Date Analyzed:	12/27-28/2011	<del></del>		

Fibertec					
Sample	Client I.D.			Non-Asbestos-Containing	
No.	No.	Description / Location	Asbestos Type	Portion	Analyst
FE-ACM-	FE-ACM-	Brown rubbery material, brown	NAD	Non-fibrous material 98%	JAW
B1-F2-35	B1-F2-35	baseboard. Layer 1 of 2.		Cellulose fibers 2%	
FE-ACM-	FE-ACM-	Brown brittle material, brown	NAD	Non-fibrous material 96%	JAW
B1-F2-35	B1-F2-35	baseboard adhesive. Layer 2 of 2.		Cellulose fibers 4%	
FE-ACM-	FE-ACM-	White cementitious material, white	NAD	Non-fibrous material 98%	JAW
B1-F2-36	B1-F2-36	wall compound.		Cellulose fibers 2%	
FE-ACM-		Beige cementitious material, 12" x	NAD	Non-fibrous material 98%	JAW
B1-F2-37	B1-F2-37	12" beige floor tile.		Cellulose fibers 2%	
FE-ACM-	FE-ACM-	Black asphaltic material, black	NAD	Non-fibrous material 94%	JAW
B1-F2-38	B1-F2-38	mastic.		Cellulose fibers 6%	
FE-ACM- B1-F2-39	FE-ACM- B1-F2-39	White cementitious material, drywall.	NAD	Non-fibrous material 92% Cellulose fibers 8%	JAW
FE-ACM-	FE-ACM-	White cementitious material, drywall	NAD	Non-fibrous material 98%	JAW
B1-F2-40		mud.		Cellulose fibers 2%	,,

# **BULK SAMPLE ANALYTICAL REPORT**

Client Name:		Horizon Environmental Corp.		
Project Name:		MUS-1401		
Summary:		45 Submitted Bulk Samples, 57 Sample Layers Analyzed	1.	
Date Sampled:	12/21/2011	Client P.O. #:	N/A	
Date Submitted:	12/23/2011	C.O.C. #:	00001	
Date Analyzed:	12/27-28/2011	<u> </u>		

Fibertec Sample	Client I.D.			Non Ashartan Containing	
No.	No.	Description / Location	Asbestos Type	Non-Asbestos-Containing Portion	Analyst
FE-ACM- B1-F2-41	FE-ACM- B1-F2-41	Brown cementitious material, baseboard adhesive.	NAD	Non-fibrous material 94% Cellulose fibers 6%	JAW
FE-ACM- B1-F2-42	FE-ACM- B1-F2-42	White fibrous material, 2' x 2' white ceiling tile.	NAD	Cellulose fibers 50% Fibrous glass 35% Non-fibrous material 15%	JAW
FE-ACM- B1-F2-43	FE-ACM- B1-F2-43	Cream rubbery material, baseboard. Layer 1 of 2.	NAD	Non-fibrous material 97% Cellulose fibers 3%	JAW
FE-ACM- B1-F2-43	FE-ACM- B1-F2-43	Brown rubbery material, baseboard adhesive. Layer 2 of 2.	NAD	Non-fibrous material 94% Cellulose fibers 6%	JAW
FE-ACM- B1-F1-44	FE-ACM- B1-F1-44	Brown cementitious material, gray floor tile. Layer 1 of 2.	NAD	Non-fibrous material 98% Cellulose fibers 2%	JAW
FE-ACM- B1-F1-44	FE-ACM- B1-F1-44	Black asphaltic material, gray floor tile black mastic. Layer 2 of 2.	NAD	Non-fibrous material 95% Cellulose fibers 5%	JAW
FE-ACM- B1-F1-45	FE-ACM- B1-F1-45	Brown cementitious material, 12" x 12" brown floor tile. Layer 1 of 2.	Chrysotile 4%	Non-fibrous material 94% Cellulose fibers 2%	JAW

# **BULK SAMPLE ANALYTICAL REPORT**

Client Name:		Horizon Environmental Corp.		
Project Name:		MUS-1401		
Summary:		45 Submitted Bulk Samples, 57 Sample Layers Analyze	d.	
Date Sampled:	12/21/2011	Client P.O. #:	N/A	
Date Submitted:	12/23/2011	C.O.C. #:	00001	
Date Analyzed:	12/27-28/2011	<del>_</del>		

Fibertec Sample No.	Client I.D. No.	Description / Location	Asbestos Type	Non-Asbestos-Containing Portion	Analyst
FE-ACM- B1-F1-45	FE-ACM- B1-F1-45	Black asphaltic material, 12" x 12" brown floor tile black mastic. Layer 2 of 2.	Chrysotile 2%	Non-fibrous material 86% Cellulose fibers 12%	JAW



### **Comments**

Bulk samples are analyzed using the USEPA Test Method EPA/600/R-93/116. The constituent percent reported represents an estimate of the area percent of the component. The test report relates only to items tested. This report is not intended to be used as a product endorsement by NVLAP or any agency of the U.S. Government. Fine fibers like those in floor tile may not be discernible by this method. This report shall not be reproduced, except in full, without the written approval of the laboratory. Individual sample layers are homogeneous, unless otherwise noted. Test items were received in acceptable condition. Revision 4.0 dated 12/8/2010.

If no asbestos was/were detected in the sample/samples the acronym NAD (no asbestos detected) will appear in the Asbestos Type column of the report.

Approved Signa	ntory:	Aully a Klivov
]	Date:	12/28/2011

FilberteC environmental sorvices

Cadillac, MI 49601 Analytical Laboratory 1974 Holloway Drive Phone: 517 699 0345 Holf, MI 48842

8660 S. Mackinaw Trail Phone: 231 775 8368

email: lab@fiberlec.us

Industrial Hygiene Services, Inc. email: asbestos@fibertec.us 1914 Holloway Drive Phone: 517 699 0345 Fax: 517 699 0382 Hoff, MI 48842

Phone: 810 220 3300 11766 E. Grand River Brighton, MI 48116 Geoprobe

10000

Chain of Custody # PAGE 1 of 5

Client Name: Horizon Existransmental (or p.		PARAMETERS	Turnaround Matrix Code	Code
Contact Person: Liz Bartz/Pausid Bundlin	(a		S Soil	GW Ground Water
Project Name/ Number: MUS - [40]	OK CODI		48 hour RUSH (surcharge Wwater applies)	Wwater SW Surface Water
	(N		<u> </u>	wwwaste water  X Other: Specify
	NIATV \Y) (I	5 <b>0- 1</b> ≥ 5		] '
Purchase Order#	1OC	)6		Makerials
Lab Sample Sample Date Work Sample # Client Sample Descriptor	# OF C	d e A	Remarks:	
12/24/11 FE-ACM-B1-F1-01 2'x2' whith geoustic ceilings tile	×			
FE-14M. 81-F1-02 R"x12" Gay Cloor Hile w/ black masta X	, M / X			
FE-ARN-B1-71-03 Yellow Grock Adresing	\ \ \ \ \			
	X			
	x   x			
	x 1 N v			
FE-ACM-01-F1-07 12" brun blow tik us, black musty x	N N N			
FF-ROW- BI-FI-08 12"x12" gray Place tilk wy bluch rugstr X	× ×			
1 F. AM. 81-F1-8 Dry Wall	X 1 N V			
1 FEERCH - BI-FI-10 2x 4" White celling tile	1 1 3			
Comments: Please Analyze Multiple Layers where applicable				
Plase send report to both eutocrtz@horizonerv.com	,V, CoM	and althoundless howeveroun	١٠٥٥س	
Relinquished By:	Date/Time (2/ <b>24</b> /11	Received By: Constant	:01 1/22/21 P	10:30 a.m.
Relinquished By:	Date/ Time	Received By:		
Relinquished By:	Date/Time	Received By Laboratory:		

TERMS & CONDITIONS ON BACK

fibertec project number: Laboratory Tracking: Temperature at Receipt:

LAB USE ONLY:

COC Revision: April, 2006

FilberteC environmental sorvicas

8660 S. Mackinaw Trail Phone: 231 775 8368 Cadillac, MI 49601 Fax: 231 775 8584 Analyfical Laboratory Fax: 517 699 0388 email: <u>lab@fiberbee:us</u> 1914 Holloway Drive Phone: 517 699 0345 Holf, MI 48842

Industrial Hygiene Services, Inc. email: asbestos@fibertec.us 1914 Holloway Drive Phone: 517 699 0345 Fax: 517 699 0382 Holf, MI 48842

11766 E. Grand River Brighton, MI 48116 Geoprobe

Chain of Custody # PAGE 2 of 5 10000

Client Name: Horizan Envitronmental Corp.		PARAMETERS	Tumaround Matrix Code	Sode
Contact Person: Liz Bortz / Dewid Bundlaws	(3		S Soil	GW Ground Water
Project Name/ Number: 14US - 14C)	VER FOR COD		<i>m m</i>	Wwater SW Surface Water A Air Www.waste Water
	TAINERS (V/N)		0	
Purchase Order#	SON			Materials
Sample Bate Climber Sample Descriptor			Remarks:	
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	x 1 W V			
wild that "21 x" 21	XIN			
FEMIN BI-FHY RIACK Mastre	X I W			
-	XIW			
FE-91.M-81-F1-16 Windows Caulk	X I W V			
	X I W			
	X I N X			
FRACH-BI-FI-A Blown on insulation	X I N			
V FE-ALM-81-F3-20 Black Floor Conting	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			
Comments: Please Analyze Multiple Layers where applicable	الارم ميران واركوم ومين ومد	and of bandlew @ howson every.	المان المراق	
	Date/ Time	Received By:	7	8
Relinquished By	Date/Time	Received By:	(65/11/0.5	10,50 a.m.
	1			
Relinquished By:	Date/ lime	Received by Laboratory:		
[AB USE ONLY: Fibertec, project number:				

TERMS & CONDITIONS ON BACK

Laboratory Tracking: Temperature at Receipt:

COC Revision: April, 2006

Fibertec environmental sorvices

Analytical Laboratory Phone: 517 699 0345 Fax: 517 699 0388 Email: [ab@fiberlec.us 1914 Holloway Drive Holf, MI 48842

8660 S. Mackinaw Trail Phone: 231 775 8368 Fax: 231 775 8584 Cadillac, MI 49601

Industrial Hygiene Services, Inc. email: asbestos@fibertec.us 1914 Holloway Drive Phone: 517 699 0345 Fax: 517 599 0382 Holf, MI 48842

Geoprobe

Phone: 810 220 3300 Fax: 810 220 3311 11766 E. Grand River Brighton, MI 48116

PAGE 3 of 5 10000

Chain of Custody #

Client Name: Harizan Sauchan Man (e.co.		PARAMETERS	Tumaround Matrix Code	
4/00	(1)		Soil	GW Ground Water
	OK CODE		48 hour RUSH (surchaige Wwater SW Surface Water applies)	surface Water
	(N/A		× K O V	wwwwaste Water  X Other: Specify
	ED (,		Other: Specify P Wipe	Dui 19 mg
Client Samula Decriptor	A PTRIX (1) RESERV A 5 6,		Remarks:	, j
FERRING 1-52-21 Rick Floor Cachine	# -			
52-24M B 1-F3-22 Dry well Mud	× ×			
Window Call	X 1 ×			
Window Courte	X   W   X			
Window	X N W	,		
Daylan	/ N 1 X		٠	
	X 1 W /			
FE-RUM. 8 2-81-28 2'x2' White Ceiling File	× - ×			
FE-184 8 1- F1-29 Pape Wrap	/ M 1 )			
V FE-FLM. B 2-FL-30 PADE ENSULAHOO	x   1   N			
Comments: Please Analyze Multiple Layers Whize Applicable. Please sind report to both enburte & holizonery. Con	الم تصورين. ومر	and @f boundless hentenern.com	۲. (۱۹۵۶)	
	Date/ Time 12/241 1000	Received By: Received By:	12/1 10:30 a.m	٠ ټ
Relinquished By:	Date/ Time	Received By:	7 7	
Relinquished By:	Date/ Time	Received By Laboratory:		
LAB USE ONLY: Fibertec project number: Laboratory Tracking: Temperature at Receipt:			COC Revision: April, 2006	

**Fiber**tec environmental services

Fax: 231 775 8584 Analytical Laboratory email: lab@fibertec.us Phone: 517 699 0345 1914 Holloway Drive Fax: 517 699 0388

8660 S. Mackinaw Trail Phone: 231 775 8368 Cadillac, MI 49601

Industrial Hygiene Services, Inc. email: asbestos@fibertec.us Phone: 517 699 0345 1914 Holloway Drive Fax: 517 699 0382 Holf, MI 48842

Phone: 810 220 3300 11766 E. Grand River Brighton, MI 48116

Geoprobe

Chain of Custody # PAGE 4 of 5

Mertanky GW Ground Water Other: Specify Water SW Surface Water Building wwwwaste water Matrix Code P O Air Wipe S Soil (surcharge applies) 48 hour RUSH (surcharge applies) 72 hour RUSH (surcharge Standard (5-7 bus. days) and of temapers o horizoners, com Other: Specify 24 hour RUSH urnaround Remarks: PARAMETERS Received By: to both entout to @ horizenerus.com 3 × × × × Date/Time <u>×</u> \<u>\</u> KESEKNED (X/N) Z. × ~ ₹ 15/23/11 3 Comments: Please Analyze Multiple layers where applicable \_ × OF CONTAINERS Х МАТRIX (зет віснт совиев гов соре) × Fig. Act. 8 1-52-34 12" 12" Beize Floor Tite of Yellow Mushe X FRACM-81-F2-35 BROWN BOSC board & Advesive FEARN-8 1-52-36 White Well Compound 12"x 12" Bann Floor Tile Client Sample Descriptor PE-AUM-8 1- F2-37 12" Kryc Floor Tib Wall Insulation Kenna/aw Window aulk FE-ALM. 8 1-F2-40 Dry Wall Mud Black Mastic するかくりらくる くっていっけ FF-401-8 1- F2-39 Drywall Pawid send resporte Project Name/ Number: MUS - 140/ FE-44-81-F2-38 Client Sample # FE-ACM- 8 1- F2-33 E-KK- B R-8-32 FE-ACM-182-F1-31 Bertz Please Contact Person: 6.72 12/24/1 Date Purchase Order# Relinquished By: Client Name: Sample

TERMS & CONDITIONS ON BACK

Fibertec project number:

LAB USE ONLY:

Laboratory Tracking:

Temperature at Receipt:

Received By Laboratory:

Date/ Time

Received By:

Date/Time

Relinquished By:

Relinquished By:

COC Revision: April, 2006

environmental Fibertec sorvices

8660 S. Mackinaw Trail Phone: 231 775 8368 Cadillac, Mi 49601 Fax: 231 775 8584 -Analytical Laboratory email: lab@fibertec.us Phone: 517 699 0345 1874 Holloway Drive Fax: 517 699 0388 Holf, MI 48842

Industrial Hygiene Services, Inc. email: <u>asbestos@fibertec.us</u> Phone: 517 699 0345 1914 Holloway Drive Fax: 517 699 0382 Holf, MI 48842

Phone: 810 220 3300 11766 E. Grand River Brighton, MI 48116 Geoprobe

Chain of Custody #

PAGE Sof S ax: 810 220 3311

Water SW Surface Water GW Ground Water Other: Specify Bulding Mestens wwwwste water 10:30 a.m Matrix Code P O Air S Soil (surcharge applies) 48 hour RUSH (surcharge applies) 72 hour RUSH (surcharge Standard (5-7 bus. days) and It hendlew @ herzonaur com Other: Specify 24 hour RUSH **Furnaround** Remarks: PARAMETERS Received By: Received By: henzenew.com 18/27/11 100 Date/ Time Date/Time 3 <u>~</u> <u>~</u> <u>≥</u> -/ × RESERVED (Y/N) FE-ALM. BI-FI-45 12" RIS" BRUN Flow Tile of black mustic X 1 W OF CONTAINERS VATRIX (SEE RIGHT CORNER FOR CODE) × × × layers where Applicable PE-ALM. B 1-FA-44 Klow Cort Adlusive, Gay Plon He, blacks enbartz@ FEACH-B1-FZ-43 Baseboard & Advesive FEACH B 1-F2-42 2' x 2' White ailing Tile Client Sample Descriptor Base board Adhesive Powel Boundlow 000 Ha Ha f Comments: Please Ancite Multiple Englanguenta Please send naport Project Name/ Number: MUS - [40] BE-12.41 Sample # Client Barte - Time Hosizan Contact Person: 672 12/24/11 Relinquished By: Date Purchase Order# Relinquished By Client Name: Sample Гаb

# TERMS & CONDITIONS ON BACK

Fibertec project number: Temperature at Receipt:

LAB USE ONLY:

Relinquished By:

Laboratory Tracking:

Received By Laboratory:

Date/ Time

COC Revision: April, 2006